

Pre-Testing Messages to the Indian Business Community on CO₂ Emissions Mitigation

Prepared for GreenCOM
By Mohan Krishman and Rathina Kumar,
Business & Industrial Research Division of the Indian
Market Research Bureau, New Delhi

November 2000

GreenCOM

Communicating Climate Change in India



Pre-Testing Messages to the Indian Business Community on CO₂ Emissions Mitigation

Prepared for GreenCOM
By Rathina Kuman and Mohan Krishnan,
Business & Industrial Research Division
of the Indian Market Research Bureau, New Delhi

November 2000

**GreenCOM
Environmental Education and Communication Project
U.S. Agency for International Development**

Communication Climate Change in India Project
Contract No. PCE-Q-00-93-00069-00, Task Order 807

This publication was prepared for USAID/India by the Environmental Education and Communication (GreenCOM) Project of USAID. The findings, conclusions, and recommendations expressed in this document do not necessarily reflect the official viewpoint of the U.S. Agency for International Development.

Prepared by:

Rathina Kuman and Mohan Krishnan, Indian Market Research Bureau

Cover design by:

Maureen Daley, GreenCOM

For more information, contact:

GreenCOM Project
Academy for Educational Development
1825 Connecticut Avenue, NW
Washington, DC 20009 USA

Tel: (202) 884-8000

Fax: (202) 884-8997

E-mail: greencom@aed.org

Web site: www.usaid.gov/environment/greencom

GreenCOM publishes three series of reports designated in the diamond in the upper right cover.

- *Research* reports include assessments, formative research, focus group reports, summative research, and project evaluations.
- *Reports* are internal project reports including quarterly reports, final reports etc.
- *Products* describe discrete major events held such as press briefings or award schemes, or describe how published materials were used in a media campaign

Most GreenCOM reports are available on line at the web site above.

The Environmental Education and Communication (GreenCOM) Project is funded and managed by the Center for Environment in partnership with the Center for Human Capacity Development and the Office for Women in Development of the Bureau for Global Programs, Field Support, and Research of the United States Agency for International Development (USAID), and by the USAID Regional Bureaus and Missions at collaborating sites. Technical Services for the GreenCOM/Communicating Climate Change in India Project (Contract No. PCE-Q-00-93-00069-00) are provided by the Academy for Educational Development, and subcontractors including Chemonics International, Global Vision, North American Association for Environmental Education, Futures Group, PRC Environmental Management, Porter Novelli, and the World Resources Institute.

Table of Contents

Table of Contents.....	i
Background	1
Methodology.....	2
Centers for Panel Discussions.....	2
Participants.....	3
Panel I	3
Panel II.....	3
Panel III.....	3
Format of this report	3
Panel I Sugar & Cement Industries.....	4
Panel II Private Sector Steel, Aluminum, and Power Industries	11
Panel III Public Sector Steel, Aluminum, and Power Industries	17
Additions / Deletions / Modifications / Suggestions To Test Messages Based On	
Panel Discussions.....	22
Additions	22
Deletions	22
Modifications	22
Suggestions and Queries	22

Background

As part of the effort to mitigate the impact of GHGs, USAID/New Delhi contracted with the Environmental Education and Communication (GreenCOM) project implemented by the Academy of Educational Development of Washington, D.C., to carry out a study of Indian Stakeholders involved in GHG issues. The study was intended to throw light on issues pertinent to development of educational materials for these stakeholders relating to reduction of greenhouse gases, and finally to test these materials developed before rollout.

The first report, *Study of Indian Stakeholders on CO₂ Emissions Mitigation*, covered the issues that came up during discussions with various stakeholders during the study. Based on the findings given in the first report, material was developed and this material was exposed to the different stakeholders to get their reactions to the same. This report, *Pre-Testing Messages to the Indian Business Community on CO₂ Emissions Mitigation*, covers the findings of the second phase, conducted by IMRB.

Methodology

This second phase of the study was in the form of panel discussions held among stakeholders representing different industries. These stakeholders had already been contacted individually during the first phase of the study.

In this second phase, the delegates in the Panel were exposed to communication material that was prepared based on the findings from the first phase of the study. The panel members were made to react to the communication material and the subsequent discussion was moderated by senior executives from IMRB.

One panel was held among industries requiring comparatively lower investments like Sugar and Cement. The other panels were held among industries requiring high investment like Aluminium, Steel, and Power.

Centers for Panel Discussions

Three panel discussions were held at two locations, Chennai and New Delhi. The panel at Chennai was among sugar and cement industries.

Two panel discussions were held in New Delhi. These panels were among high investment industry sectors namely Steel, Aluminum and Power. One panel was among public sector units and the other was among private sector units.

Participants

The list of participants in the panel are given in the following table

Panel I

(Sugar & Cement Industries)

Company	Participant
Tamil Nadu Cement Corporation Ltd.	Mr. P. Muthuswamy, General Manager
Dharani Sugars & Chemicals Ltd.	Mr. S. Viswanathan, Deputy General Manager (Works)
Sudalagunta Sugars Ltd.	Mr. K. Suresh Babu, Manager (Production)

Panel II

(Private Sector Steel, Aluminium, and Power Industries)

Company	Participant
Hindalco Industries Ltd.	Mr. Mihir Moitra, General Manager (Environment)
BSES Ltd.	Mr. S.S. Dua, Director (Technical)
National Thermal Power Corporation Ltd.	Mr. V.N. Chaudhary, Deputy General Manager
National Thermal Power Corporation Ltd.	Mr. Ramgopal

Panel III

(Public Sector Steel, Aluminum, and Power Industries)

Company	Participant
Maharashtra State Electricity Board	Mr. G.G. Dalal, Chief Engineer
Steel Authority of India Limited	Mr. J. Kumar, Additional Director (Environment)
Steel Authority of India Limited	Mr. C.L. Sharma, Joint Director (Projects)
Steel Authority of India Limited	Mr. R.N. Rawat, Senior Deputy Director

Format of this report

The discussions with each of the three groups are presented separately. For each group, the statement or information presented is shown first followed by a summary of the responses.

Panel I Sugar & Cement Industries

Discussion of public and private sugar and cement industry representatives held 20 October 2000 at the Hotel Residency, Chennai.

A. Statements presented

1. Indian Industry is aware of the importance of energy efficiency;
2. There are some highly energy efficient countries in different Industrial Sectors.

A. Response

There was general agreement to this message.

1. Panel Members were of the opinion that every company will try to get maximum efficiency and to improve profitability. Awareness of energy efficiency was felt to be high among industries like Sugar & Cement in India as these were considered major industries in the country;
2. Panel Members also said that there are certain norms in each industry that are accepted by industry players. For example in cement, the units of power consumed per ton of cement manufactured are looked at. The lower the power units, the higher the efficiency. Similarly, in the sugar industry, the norm is expressed as the percentage of steam requirement to the quantity of sugar cane processed. All Panel Members said that improvement in efficiency was a continuous process.

B. Statements presented

1. Energy efficient companies are:

- **Steel**

- Rashtriya Ispat Nigam Limited, Vizag
- Bhilai Steel Plant (SAIL), Bhilai

- **Aluminium**

- Hindalco, Renukoot
- NALCO, Angul

- **Power**

- Punjab State Electricity Board
- Ramagundam Thermal Power Plant
- BSES, Mumbai
- TEC, Mumbai

B. Response

Panel Members neither agreed nor disagreed with the examples. However, they added a few examples from their experiences and the industries they belonged to.

1. The Tuticorin Thermal Power Plant and the Mettur Power Plant were considered to be very efficient. One Panel Member mentioned that a thermal power plant in Vijayawada was considered to be very efficient;
2. The Caustic Soda industry was supposed to have drastically reduced their consumption of power by using the modern membrane technology. There was a unit of TEAM in Pondicherry that was mentioned.

C. Statements presented

1. In cement industry also, many companies have adopted the energy efficient dry process;
2. In the sugar industry, companies have adopted co-generation of power.

C. Response

Panel members agreed to this.

1. The Madras Cement Plant at Alathiyur in Tamil Nadu was considered a very efficient plant by the Panel Members. In India, Gujarat Ambuja was said to be renowned of setting examples for efficient functioning;
2. The sugar industry in India was considered to be among the most energy efficient among sugar companies in the world. Panel Members said that this was because of the use of high pressure boilers and the use of cogeneration in the industry. In Tamil Nadu, Thiru Arooran Sugars were said to be the pioneers in using high pressure boilers. At Dharani Sugars, high pressure boilers, high efficiency multi-stage turbines and variable frequency hydraulic drives for the mills had been installed to maximise efficiency.

D. Statements presented

Areas where energy efficiency can be achieved:

- Furnace
- Kiln
- Boiler
- Process

D. Response

Panel Members agreed to this.

1. Panel Members mentioned drivers / prime movers as another area where energy efficiency could be achieved. In the Cement Industry, it was felt that the Furnace and the Kiln were the areas for energy efficiency. In the sugar industry, efficiency was improved by using variable speed drives wherever possible (e.g. in Crystallisers);
2. Panel Members also mentioned that renewable energy sources were not being used in the cement and sugar industries. However, there is a case where the Tamil Nadu Newsprint Limited (TNPL) buys baggase from sugar factories (for manufacturing newsprint) and in return, supplies coal based steam to the sugar factories. TNPL have invested in the Coal Fired Boiler.

E. Statements presented

1. You can reduce operating costs and save money by being more energy efficient;
2. Consequently, you can increase profits and competitiveness.

E. Response

Panel members all agreed.

1. Regarding energy efficiency, a Panel Member said that in industry, 1 unit of Power saved was considered equal to 2 units generated. With improvement of technology, energy consumption gets reduced;
2. Panel Members also said that the rated output of equipment had to be maintained

by the operations personnel to keep a check on efficiency. A Panel Member went on to say that even the life of certain equipment increases, as they do not have to run full time.

F. Statements presented

1. Energy efficiency firms are environmentally friendly and this improves their public image;
2. Besides saving money by being energy efficient, you can make money by taking credit for carbon emission reduction;
3. This is the added advantage of energy efficiency

F. Response

Panel Members were not in total agreement with this.

1. Today, the public is slowly becoming more aware about visible pollution (like smoke billowing out of chimneys). The Pollution Control Boards are also becoming stricter. Moreover, for reducing cost, companies have to become energy efficient;
2. Panel Members feel that in India, the use of Public Image for marketing is yet to take off. Profit is the primary concern of all companies. The cost factor is more important than the public factor in India. So, just being environmentally friendly is not enough;
3. Panel Members see the need for some subsidy or tax exemption from the Government to encourage companies to be more concerned about environment;
4. The public is bothered about the product and not about the means used to make the product. In the case of environment related matters, industry awareness is fairly good as compared to the general public whose awareness is not so high.

G. Statements presented

1. There is already one Indian company—TISCO, involved in negotiating with a Japanese firm for Carbon Emission Trading (CET).

G. Response

1. Panel members were eager to know how far the discussions had progressed.

H. Statements presented

There are many examples of benefits accruing from CET in other countries:

Mitigation Action	Country	Transaction Size (US \$ Mln.)
Landfill gas electricity generation	USA	2.5
Changing cattlefield	Uganda	10
Forest Conservation	Bolivia	25

H. Response

1. Panel Members were surprised that the transactions were of such large volume in an African country. Panel Members also wanted to know whether forest conservation was under the ambit of CET;
2. The feeling was that India was just starting in this field as evident from the TISCO example.

I. Statements presented

1. Carbon Dioxide is one of the GHGs that contributes to global warming;
2. As India depends on its low grade coal for its energy requirement, improvement in energy efficiency can do a lot to reduce the emission of Carbon Dioxide;
3. Reducing the Carbon Dioxide emission slows prevents global warming.

I. Response

1. A Panel Member asked whether there is data available that indicated the increase of CO₂ emissions over the years;
2. A Panel Member said that thermal power plants were fitted with ESPs to filter the suspended particles. But the CO₂ was still being let out into the atmosphere. The feeling was that only with improvement in technology could such emissions of GHGs be reduced. Ultimately, it boils down to technology improvement.

J. Statements presented

1. Developed nations may initiate and adopt measures to control global climatic changes;
2. Irrespective of their action, India must take control of the climatic situation in this region.

J. Response

Panel Members were not in total agreement to this.

1. Panel Members felt that Industry in India was generally sick and it was a matter of survival for them. Under such circumstances, climatic control and reduction of GHG gas emission will be far from their minds. Of course, once a company makes profit and is comfortable, then they can think of these things. The other thing is that the Government should give some subsidy or incentives like tax benefits, etc. to motivate companies to take up measures to reduce GHG emissions in their area;
2. Indian Industry will obey only if statutory laws are there for emissions. Voluntarily, they will not do anything. Only when lawfully forced will they do something. A Panel Member said that it was not because the Indian Industry is not concerned about environment but the very fact that survival was becoming very difficult was making Indian Industry to turn a blind eye to such things. In fact, some of the emission control equipment (like effluent treatment plant) cost as much as the entire project or sometimes even more. In such a case, how can an Industry in India think of environmental protection measures?
3. Panel Members agreed that instead of saying that you should take control of the climatic change in your region, it would be better to say you have to go for better technology to be more cost competitive.

K. Statements presented

1. India has signed the Climate Change Convention calling for efforts to reduce GHG emissions;
2. CET is coming soon. This is how it works (Hand out given to Panel Members):

How Carbon Emission Trading Works

There is international interest in limiting and stabilizing emissions of Green House Gases (GHG). It is internationally recognised that developed nations are responsible for much of the past and present emission of these gases. It is also recognised that to achieve growth, the GHG emission of developing countries will continue go up. So several industrialised countries have agreed to limit their GHG emissions to 5% below their 1990 levels in the period 2008-2015.

Industrialised countries can achieve GHG emission reduction by increasing energy efficiency, adopting greater use of renewable energy sources, enhancing the capacity of carbon sinks, and making lifestyle changes to reduce energy consumption. They can also earn credits through investments in developing countries leading to Certified Emission Reductions (CERs) or buying of extra emission rights from the latter. Credits are usually expressed in tons of CO₂ emissions reductions. Value may be imputed to a certified credit and that can be sold to buyers on the international market.

The investments made by developed nations need to result in emission reductions additional to any that would have occurred in the host country in the absence of the investment. In order to determine what is additional, it is important to define a baseline which serves as a reference point for the reductions achieved, and to have unbiased verification entities to ensure correct reporting of credits. For credit to be granted, activities undertaken in this regard must reflect real, measurable and long-term benefits related to the mitigation of climate change.

Developing countries need to ensure that adequate and long-term economic and other benefits accrue to the country in the form of a fair price for carbon credits, technology upgrading, capacity building, employment generation, etc., leading to sustainable development.

Procedures for transferring and sharing credits need to be negotiated, based on guidelines. Operational entities to certify the emissions reductions will be designated in the future.

K. Response

1. Panel Members felt that it was significant that it has been recognised that the developed countries are the main reason for GHG emissions. Panel Members were of the view that the details in the hand out sounded more like a broad policy. An example cited was the 5% below the 1990 levels to which the developed countries have accepted. Panel Members were of the view that this should be quantified;
2. The Panel Members felt that the write up needed more elaboration and further, examples needed to be cited. Like in the case of making lifestyle changes. What exactly can be done and should be done should be clearly mentioned;

3. Overall, the Panel Members felt that the note was too short and vague and needed a lot of elaboration. They felt that the write up should be more detailed starting with Green House Gases, what is the level of CO₂ how it has been increasing (with figures), how this trading will happen. Step by step, everything should be explained. Norms are available for SO₂, NO₂ emissions but there are no such norms for CO₂ emissions.

L. Statements presented

1. Regardless of the implementation of international agreements made by the governments, CET will probably happen in some form or the other;
2. This is how to prepare for it (hand out given to Panel Members):

How to Prepare for Carbon Emission Trading

Complete records of the project should be maintained.

It should be checked that real, measurable, and long-term GHG emission reduction would materialise from the project.

Project should not rely on developmental or environmental assistance (concessional funding); project should have not been feasible on its own without funds from Certified Emissions Reductions.

Letter of approval for project from the highest possible level of government should be obtained.

Potential reductions in GHG emission should be verified using a methodology endorsed by the industry. If possible, a third party should be used to establish a suitable monitoring methodology and to conduct periodic reviews.

Clear ownership of CERs should be established.

All project costs and revenues, including realistic projections for the future price of CER should be accurately represented while marketing a project. Impartial market brokers may be helpful in this regard.

Information on credit worthiness of project owners should be kept ready.

Additional endorsement of the project through international entities, industry associations, government and multilateral climate change funds should be obtained.

3. Better energy efficient technologies are available to reduce carbon emission;
4. Under CET, International buyers provide funds for implementing these technologies.

L. Response

1. Panel Members wanted to know whether projects which had received funding for some other reason (maybe for using some non conventional energy source, etc.), whether these projects would qualify for funds from CERs. On the context of a third party being used to establish a suitable monitoring methodology and for conducting periodic reviews;
2. On the context of a third party being used to establish a suitable monitoring methodology and for conducting periodic reviews, Panel Members felt that this third party should be a reputed, reliable party, which can be counted upon. Panel Members also wanted to know what were the technologies available and how would it be possible to check out the reliability of these technologies;

3. When talking of how to prepare for CET, the Panel Members were keen to know what was the reaction of the Government / Ministries in this regard. Panel Members stuck to their opinion that only incentives from the Government or making CO₂ emission controls mandatory were the ways to make industry implement such measures. Another point that was made by the Panel Members regarding preparing for CET was that industry awareness of the same at present was low and hence the awareness level of CET had to be dramatically increased among industry maybe through seminars or other means.

M. Statements presented

1. Using energy efficient technology through CET will make India more competitive in the world market;
2. Technology and funds infusion via CET will help the Indian Economy by providing jobs and capital to mitigate social and environmental problems

M. Response

1. After all the talk of CO₂ emission reduction, Panel Members wanted to know if there are methods of mitigating CO₂ through some artificial means like using some solvent in which CO₂ will get absorbed.

Panel II Private Sector Steel, Aluminum, and Power Industries

Discussion of private sector steel, aluminum, and power sectors held November 3, 2000, at the Hotel Intercontinental, New Delhi.

A. Statements presented

1. Carbon Dioxide is one of the GHGs that contributes to global warming;
2. As India depends on its low grade coal for its energy requirement, improvement in energy efficiency can do a lot to reduce the emission of Carbon Dioxide;
3. Reducing the Carbon Dioxide emission slows prevents global warming.

A. Response

All panel members agreed to the message.

1. Some of the points mentioned worth adding to the message;
2. Coal is the cheapest energy resource available in India. India is dependent on coal as energy resource and will continue to be dependent on coal as the primary source of energy for the next 100 years atleast. It has huge coal reserves that can last for centuries but very little of liquid fuel stock;
3. Better coal by way of beneficiation of available coal would improve energy efficiency;
4. Energy efficiency includes both generation efficiency and consumption efficiency.

B. Statements presented

1. Indian Industry is aware of the importance of energy efficiency;
2. There are some highly energy efficient companies in different industrial sectors.

B. Response

There is some disagreement with this message. It is felt “Many Indian industries are aware of the importance of energy efficiency, but only a few have adopted measures for energy efficiency.”

1. Reluctance for adopting energy efficiency measures is attributed to :
 - Lack of long term perspective
 - Inadequate availability of funds for capital investment
 - Unwillingness/inability to scrap & replace existing plant & machinery

Examples of such companies are:

- **Steel**
 - Rashtriya Ispat Nigam, Vizag
 - Bhilai Steel Plant (SAIL), Bhilai
- **Aluminium**
 - Hindalco, Renukoot
 - NALCO, Angul

- **Power**

- BSES, Mumbai
 - TEC, Mumbai
 - NTPC, Dadri
1. There is general agreement that units mentioned are exemplarily energy efficient. A few more examples were cited by the participants - BALCO, Korba in Aluminium and NTPC, Raichur & APGENCO, Vijayawada in Power;
 2. It was felt that in Power sector the energy efficiency is dependent on the quality of coal used on which the power plants have very little control. It is also felt that in the power sector the plants are not driven by any need to be cost competitiveness and so they do not feel the necessity to be energy efficient.

C. Statements presented

1. In cement industry also, many companies have adopted the energy efficient dry process;
2. In the sugar industry, companies have adopted co-generation of power.

C. Response

1. All agreed. Gujarat Ambuja Cements is cited to be an example of energy efficiency.

D. Statements presented

1. You can reduce operating costs and save money by being more energy efficient;
2. Consequently, you can increase profits and competitiveness.

D. Response

1. Everyone agreed that it is true and the whole reason for being energy efficient can be explained by these messages.
2. Areas where energy efficiency can be achieved:
 - Furnace
 - Kiln
 - Boiler
 - Process
3. All energy efficiency can be achieved in these areas. Important additional areas for energy efficiency mentioned are 'Lighting' & 'Transportation'. It was felt that lighting in any industrial unit constitutes as much as 15% of the energy consumption and saving in the energy is possible.
4. Waste heat recovery is opined to be part of the respective equipment like furnace, kiln & boiler.

E. Statements presented

1. Better energy efficient technologies are available to reduce carbon emission;
2. Under CET, International buyers provide funds for implementing these technologies

E. Response

1. Every one agrees with first part of the message that energy efficient technologies are available. But they say that they are not sure that there are international buyers ready to provide funds under CET for implementing these technologies. They say these buyers are there 'only on paper,' it at all such buyers are available, 'it is not evident to them;'
2. Some of panellists said that the link between energy efficient technology and carbon emission reduction have not been brought out clearly in the message;
3. Some also felt that most of the energy efficient technologies available are for new plants and there are few technologies for improvement of efficiencies of existing plants.

F. Statements presented

CET is coming soon. This is how it works:

1. There is international interest in limiting and stabilizing emissions of Green House Gases (GHG). It is internationally recognized that developed nations are responsible for much of the past and present emission of these gases. It is also recognized that to achieve growth, the GHG emission of developing countries will continue go up. So several industrialized countries have agreed to limit their GHG emissions to 5% below their 1990 levels in the period 2008-2015;
2. Industrialized countries can achieve GHG emission reduction by increasing energy efficiency, adopting greater use of renewable energy sources, enhancing the capacity of carbon sinks, and making lifestyle changes to reduce energy consumption. They can also earn credits through investments in developing countries leading to Certified Emission Reductions (CERs) or buying of extra emission rights from the latter. Credits are usually expressed in tons of CO₂ emissions reductions. Value may be imputed to a certified credit and that can be sold to buyers on the international market;
3. The investments made by developed nations need to result in emission reductions additional to any that would have occurred in the host country in the absence of the investment. In order to determine what is additional, it is important to define a baseline which serves as a reference point for the reductions achieved, and to have unbiased verification entities to ensure correct reporting of credits. For credit to be granted, activities undertaken in this regard must reflect real, measurable and long-term benefits related to the mitigation of climate change;
4. Developing countries need to ensure that adequate and long-term economic and other benefits accrue to the country in the form of a fair price for carbon credits, technology upgrading, capacity building, employment generation, etc., leading to sustainable development;
5. Procedures for transferring and sharing credits need to be negotiated, based on guidelines. Operational entities to certify the emissions reductions will be designated in the future.

F. Response

1. Some of issues felt to be unclear in the message are :
 - What is the form of trading? What will be the unit of trading for emission reduced?
 - What is the baseline over which the reduction will be calculated?
 - Is the CET applicable to both new and existing plants?
2. Some of the panelists felt that message gives the impression that funding under CET is contingent upon sourcing the technology from a specified vendor at a given price. They want the message to clarify that the funding under CET is available for any energy efficient technology sourced from their selected vendor after negotiation of price & terms. In other words the technology provider and the CET buyer need not be the same and need not have any links. They fear that tying funding to sourcing of technology would mean back door selling of technology by the supplier.

How to Prepare for Carbon Emission Trading

Complete records of the project should be maintained.

It should be checked that real, measurable, and long-term GHG emission reduction would materialise from the project.

Project should not rely on developmental or environmental assistance (concessional funding); project should have not been feasible on its own without funds from Certified Emissions Reductions.

Letter of approval for project from the highest possible level of government should be obtained.

Potential reductions in GHG emission should be verified using a methodology endorsed by the industry. If possible, a third party should be used to establish a suitable monitoring methodology and to conduct periodic reviews.

Clear ownership of CERs should be established.

All project costs and revenues, including realistic projections for the future price of CER should be accurately represented while marketing a project. Impartial market brokers may be helpful in this regard.

Information on credit worthiness of project owners should be kept ready.

Additional endorsement of the project through international entities, industry associations, government and multilateral climate change funds should be obtained.

3. Though the message was understood well, there was confusion on the additionality criteria. Some example of situations with project options would make it easy to understand. Another query from the panelists was that what type of projects are eligible for CET and what type of projects are precluded. It may be made clear that no project is excluded as long as it brings about emission reduction and meets the other criteria. Also some typical examples of projects that can be attract CET may be indicated for better understanding.

G. Statements presented

1. Energy efficiency firms are environmentally friendly and this improves their public image;
2. Besides saving money by being energy efficient, you can make money by taking credit for carbon emission reduction;

3. This is the added advantage of energy efficiency.

G. Response

1. Though generally everybody agrees on the message, there was a debate on the use of 'public image' to the firm. It was concluded that though the public image would not help directly in selling the firm's products, the goodwill generated by environmentally friendly gestures will endure the company with its employees, customers and neighbours. So the firms are really attach an importance to improvement of public image.

H. Statements presented

1. Developed nations may initiate and adopt measures to control global climatic changes;
2. Irrespective of their action, India must take control of the climatic situation in this region.

H. Response

1. Generally everybody agrees with the message. They felt that India could set an example to other countries by taking control of the climatic situation in the region as Sweden does in Europe. But at the same one of the panelist felt that the message should include that climatic change is a global phenomenon and India should keep tab on what is happening at the global level.

I. Statements presented

1. India has signed the Climate Change Convention calling for efforts to reduce GHG emissions

I. Response

1. All agree with message.

J. Statements presented

1. Using energy efficient technology through CET will make India more competitive in the world market
2. Technology and funds infusion via CET will help the Indian Economy by providing jobs and capital to mitigate social and environmental problems

J. Response

1. Generally everyone agrees to the message. But some panelists want examples to show the creation of jobs and mitigation of social and environmental problems.

K. Statements presented

1. There are many examples of benefits accruing from CET in other countries:

Mitigation action	Country	Transaction size (US\$ Mln)
Landfill gas electricity generation	USA	2.5
Changing cattlefeed	Uganda	10
Forest conservation	Bolivia	25

K. Response

1. It was felt that examples applicable in the Indian context would generate more interest.

L. Statements presented

1. There is already one Indian company—TISCO, involved in negotiating with a Japanese firm for Carbon Emission Trading (CET)

L. Response

1. It was felt that this message would more confidence for the industry to make use of CET.

Panel III Public Sector Steel, Aluminum, and Power Industries

Discussion of public sector steel, aluminium, and power industry representatives held November 3, 2000, at Hotel Intercontinental, New Delhi.

A. Statements presented

1. Carbon Dioxide is one of the GHGs that contributes to global warming;
2. As India depends on its low grade coal for its energy requirement, improvement in energy efficiency can do a lot to reduce the emission of Carbon Dioxide;
3. Reducing the Carbon Dioxide emission slows prevents global warming.

A. Response

1. Generally the panelists agree to the message; there have been some suggestions. It was said that the message could be modified to say 'Carbon dioxide is one of the GHGs that **mainly** contributes to global warming.' But whether it is the main contributor to global warming may be checked up;
2. It was suggested that along with the message saying 'improvement in energy efficiency can reduce the emission of CO₂,' the following should be added – 'Emission reduction can be achieved by improving the coal quality through washeries.'

B. Statements presented

1. Indian Industry is aware of the importance of energy efficiency
2. There are some highly energy efficient companies in different industrial sectors
3. Examples of such companies are:

- **Steel**

- Rashtriya Ispat Nigam, Vizag
- Bhilai Steel Plant (SAIL), Bhilai

- **Aluminium**

- Hindalco, Renukoot
- NALCO, Angul

- **Power**

- NTPC Dadri
- BSES, Mumbai
- TEC, Mumbai

B. Response

1. There is general agreement that units mentioned are exemplarily energy efficient. It was pointed out that TEC, Mumbai power plant uses gas and so its efficiency can not be compared with other power plants. It was also pointed out that though the examples in steel sector are efficient; they are nowhere comparable to world standards.

C. Statements presented

1. In cement industry also, many companies have adopted the energy efficient dry process
2. In the sugar industry, companies have adopted co-generation of power

C. Response

1. All agree.

D. Statements presented

1. You can reduce operating costs and save money by being more energy efficient;
2. Consequently, you can increase profits and competitiveness.

D. Response

1. Everyone agreed.

Areas where energy efficiency can be achieved:

- Furnace
 - Kiln
 - Boiler
 - Process
2. It was suggested that the message should be modified taking into account the fact that furnace, kiln & boiler refer to combustion side. "Energy efficiency can be achieved either in combustion or in the process. Improvement in combustion efficiency can happen in a furnace, kiln or a boiler."

E. Statements presented

1. Better energy efficient technologies are available to reduce carbon emission;
2. Under CET, International buyers provide funds for implementing these technologies.

E. Response

1. It was suggested that instead of 'better energy efficient technologies,' 'more energy efficient technologies' should be used;
2. It was felt that if there are international buyers to provide funds under CET, it is not known/evident. It was mentioned that a list of such buyers should be indicated;
3. It was pointed out by panelist that though international buyers were willing to provide funds for a project, they insisted on sourcing the equipment from a specified vendor at a given cost. Everyone concurred this can not be an acceptable practise. It was suggested that it should be made clear sourcing of the technology or equipment can not be forced by the CET buyer.

F. Statements presented

CET is coming soon. This is how it works:

- There is international interest in limiting and stabilizing emissions of Green House Gases (GHG). It is internationally recognized that developed nations are responsible for much of the past and present emission of these gases. It is also recognized that to achieve growth, the GHG emission of developing countries will continue go up. So several industrialized countries have agreed to limit their

GHG emissions to 5% below their 1990 levels in the period 2008-2015.

- Industrialized countries can achieve GHG emission reduction by increasing energy efficiency, adopting greater use of renewable energy sources, enhancing the capacity of carbon sinks, and making lifestyle changes to reduce energy consumption. They can also earn credits through investments in developing countries leading to Certified Emission Reductions (CERs) or buying of extra emission rights from the latter. Credits are usually expressed in tons of CO₂ emissions reductions. Value may be imputed to a certified credit and that can be sold to buyers on the international market.
- The investments made by developed nations need to result in emission reductions additional to any that would have occurred in the host country in the absence of the investment. In order to determine what is additional, it is important to define a baseline which serves as a reference point for the reductions achieved, and to have unbiased verification entities to ensure correct reporting of credits. For credit to be granted, activities undertaken in this regard must reflect real, measurable and long-term benefits related to the mitigation of climate change.
- Developing countries need to ensure that adequate and long-term economic and other benefits accrue to the country in the form of a fair price for carbon credits, technology upgrading, capacity building, employment generation, etc., leading to sustainable development.
- Procedures for transferring and sharing credits need to be negotiated, based on guidelines. Operational entities to certify the emissions reductions will be designated in the future.

F. Response

1. There was a query on how the CET works. It is mentioned that the developed countries could also earn credits through investments in developing countries leading to Certified Emission Reductions (CERs) or buying of extra emission rights from the developing countries. It is asked whether buying of extra emission rights through CET could allow developed countries to even exceed the 1990 emission levels or could only allow to exceed the reduced limit agreed upon.

G. Statements presented

How to Prepare for Carbon Emission Trading

Complete records of the project should be maintained.

It should be checked that real, measurable, and long-term GHG emission reduction would materialise from the project.

Project should not rely on developmental or environmental assistance (concessional funding); project should have not been feasible on its own without funds from Certified Emissions Reductions.

Letter of approval for project from the highest possible level of government should be obtained.

Potential reductions in GHG emission should be verified using a methodology endorsed by the industry. If possible, a third party should be used to establish a suitable monitoring methodology and to conduct periodic reviews.

Clear ownership of CERs should be established.

All project costs and revenues, including realistic projections for the future price of CER should be accurately represented while marketing a project. Impartial market

brokers may be helpful in this regard.
 Information on credit worthiness of project owners should be kept ready.
 Additional endorsement of the project through international entities, industry associations, government and multilateral climate change funds should be obtained.

G. Response

1. All agreed that these are simple to understand.

H. Statements presented

1. Energy efficiency firms are environmentally friendly and this improves their public image;
2. Besides saving money by being energy efficient, you can make money by taking credit for carbon emission reduction;
3. This is the added advantage of energy efficiency.

H. Response

1. All agreed. It was felt that though the improvement in the public image may not be useful immediately in the Indian market, it will help the company in the long run. Also as public sector companies, the panelists felt that they have a responsibility to society to reduce emission and comply with international agreements.

I. Statements presented

1. Developed nations may initiate and adopt measures to control global climatic changes
2. Irrespective of their action, India must take control of the climatic situation in this region

I. Response

1. All concurred.

J. Statements presented

1. India has signed the Climate Change Convention calling for efforts to reduce GHG emissions.

J. Response

1. All agree with message.

K. Statements presented

1. Using energy efficient technology through CET will make India more competitive in the world market;
2. Technology and funds infusion via CET will help the Indian Economy by providing jobs and capital to mitigate social and environmental problems.

K. Response

1. All panelists agreed.

L. Statements presented

1. There are many examples of benefits accruing from CET in other countries:

Mitigation action	Country	Transaction size (US\$ Mln)
-------------------	---------	-----------------------------

Landfill gas electricity generation	USA	2.5
Changing cattlefeed	Uganda	10
Forest conservation	Bolivia	25

L. Response

1. It was felt that some Indian examples will be useful.

M. Statements presented

1. There is already one Indian company—TISCO, involved in negotiating with a Japanese firm for Carbon Emission Trading (CET)

M. Response

1. It was felt that a list of buyers of CET can be compiled and made available. Also whom should be contacted for further information should be indicated.

Additions / Deletions / Modifications / Suggestions To Test Messages Based On Panel Discussions

Additions

1. "Improvement of energy efficiency is a continuous process;"
2. Vijayawada Thermal Power Plant of APGENCO is to be added as an example of efficient power plant;
3. Gujarat Ambuja Cement is to be added as an energy efficient cement plant;
4. Thiruarooran Sugars is to be added as an energy efficient sugar plant;
5. "Improving public image will create goodwill among the customers, employees and neighbours and will help in the long run. Also the companies have a social responsibility to keep the emission down;"
6. CO₂ emission reduction can be achieved by improving the energy efficiency and by improving the quality of the fuel (coal).

Deletions

1. TEC, Mumbai is to be removed from the list of energy efficient companies.

Modifications

1. "Many Indian industries are aware of the importance of energy efficiency; but only **some** of them have adopted complete measures for energy efficiency **due to lack of funds for replacement of existing equipment or installing new equipment;**"
2. By being energy efficient, you can reduce operating and **maintenance costs and increase the life of the equipment** and thus save money;
3. There are some highly energy efficient companies in different sectors **but in many instances their energy efficiency is nowhere near the world standards;**
4. Energy efficiency can be achieved either in the combustion or in the process. Improvement in the combustion efficiency can happen in furnace, kiln or a boiler including recovery of waste heat from these equipment. Lighting and material transport are other areas where substantial energy saving is possible.

Suggestions and Queries

1. Some indications on global warming that has already happened may be provided;
2. If carbon dioxide is the main contributor to global warming, the message can be modified to "Carbon dioxide is one of the GHGs that **mainly** contributes to global warming;"
3. The fact that international buyers provide funds under CET should be substantiated by making a list of "CET buyers;"
4. It should be clarified that sourcing of specific technology or equipment for

- emission reduction would not be forced by the CET buyer;
5. It should be clarified that buying of extra emission rights would not allow developed countries to exceed even their 1990 emission levels;
 6. Some typical examples of emission mitigation projects that could be applicable to India should be given;
 7. Person or organisation whom should be contacted further information / action should be provided;
 8. The link between energy efficient technology and carbon emission reduction should be brought out clearly;
 9. It should be clarified that CET is possible by emission reduction in new and existing plants;
 10. What is the baseline for measuring reduction in emission should be explained with examples;
 11. The communication material should be of two parts, the first part containing details about GHG emission, global warming and its long term impact and the second part containing the details about how CET works and how to prepare for it.

Communicating Climate Change in India
Contract No. PCE-Q-00-93-00069-00
Task Order 807

